

## ABSTRACT

A fuel management system for an internal combustion engine including an intake manifold is presented. The fuel management system includes a thermal reactor having an inlet port and an outlet port. The thermal reactor receives liquid fuel through the inlet port and is adapted to heat the liquid fuel and discharge fuel vapor through the outlet port.  
5 A pressure sensing device is configured to measure pressure within the intake manifold to determine engine load. A plenum is adapted to receive the fuel vapor from the outlet port and mix the fuel vapor with air, and the plenum is adapted to be connected to the intake manifold to provide the fuel vapor and air mixture to the intake manifold. A fuel metering  
10 device is operable to regulate the amount of fuel vapor provided to the plenum in response to the pressure sensing device.